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Monthly Progress Report

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Contractor's Progress, Status and Management Report -- Monthly Progress Report

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1 December through 31 December 1998

Date of Report: 15 January 1999

Wrist Interactive Device for Wearable PC
SBIR Phase II Topic N95-137
Contract No. N00421-97-C-1293
Dollar Value $1,708,653

ViA Inc.
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Charles D. Caposell
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1. Progress & Plans

ViA has selected the StrongARM as the initial microprocessor for prototype development. A StrongARM evaluation board was ordered in October and was delivered in late November. The SideKick companion board, which houses the SA1101, was delivered in December. Once a functionally complete prototype is available, performance analysis will be performed to determine if the wrist device can utilize a less powerful processor. In the meantime, revised data suggests that the combination of the SA1100 and the SA1101 will exceed our original power budget for the CPU. Therefore, ViA will be studying approaches to eliminate the SA1101 from the final system solution.

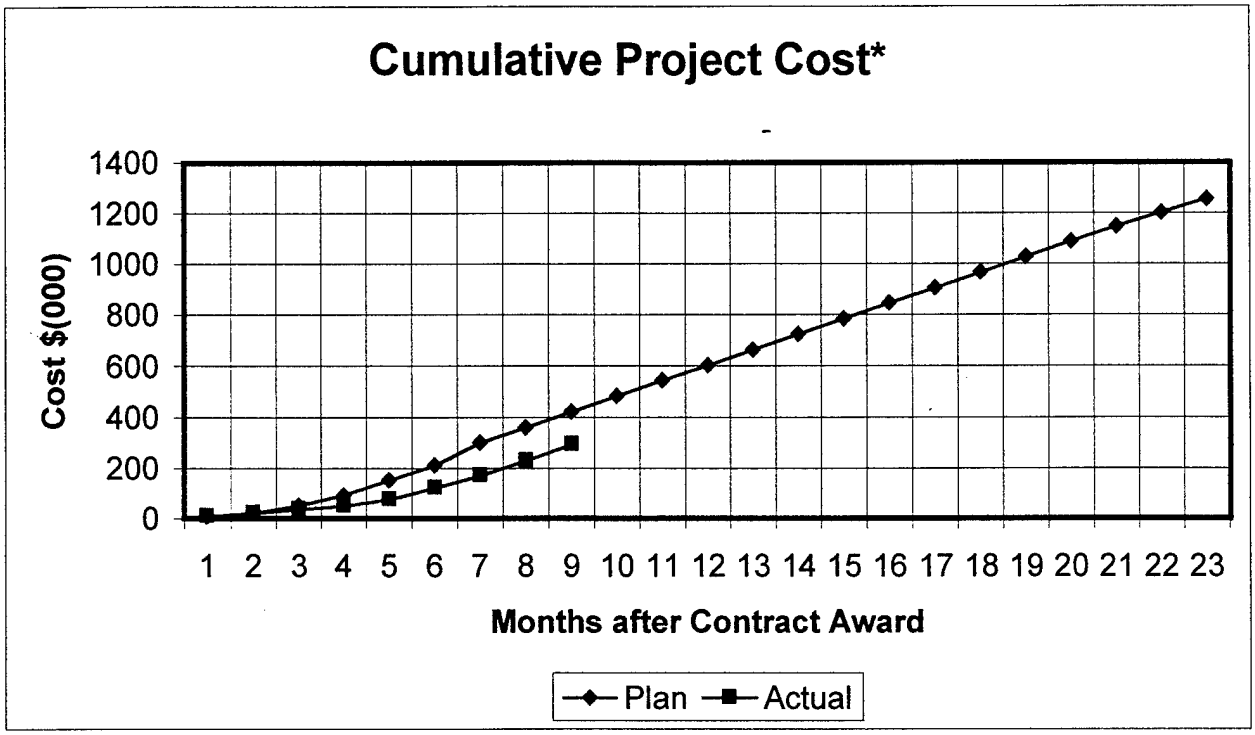
The Xetron development boards are proceeding but have experienced further delays. Quality problems in the board manufacturing were experienced. The delivery of functional prototypes from Xetron has slipped until January. Xetron is promising functional prototypes by the middle of January, with ASICs available in April. We have begun preparing a lab to facilitate assessment of the Xetron and BlueTooth systems. Spectrum analyzers and other test equipment have now arrived.

ViA has continued development on the device drivers to support the distributed architecture. We are concentrating on creating drivers for the video device. The distributed video driver is now capable of supporting line drawing commands. Development of BITBLT support is now underway with significant progress made on the host side of the drivers. Once the BITBLT functions are implemented, the device driver should be capable of correctly rendering the majority of the Windows Desktop. After BITBLT support is complete, support for text rendering will be added. Upon successful demonstration of the capability, the driver model will be extended to the microphone, speaker, and serial devices (i.e. the vibrator and the map reader). Finally, the driver model will then be extended to support power management. We expect to demonstrate the distributed video in January. Microphone, speaker, and serial devices will be demonstrated in mid-1999 and the power management in the Fall of 1999.

ViA and DisplayWear had previously developed a preliminary, conceptual approach for the optical design, using display solutions from MicroDisplay and from FED as representative approaches. A more detailed design for the emissive solutions (i.e. the FED display) has been completed. We proceeded by creating a complete CAD model for the emissive solution. Development of a physical model is expected to be complete by the end of January. ViA and DisplayWear are also continuing to refine the optical designs for reflective displays. We expect to create a complete CAD model for the reflective solution by the end of December. The CAD model will be based on the Colorado MicroDisplay device rather than the MicroDisplay device. This is due to availability of functional units, availability of design specifications, and other similar issues. We expect to have a physical model completed in February; although we are working to pull the schedule in so that the model can be demonstrated by the end of January.

ViA is working with FED to gain access to early prototype components as quickly as possible. Although FED has experienced some unfortunate delays, we are hopeful that we can receive delivery of an engineering unit in mid-March.

2. Project Cost



*w/o G&A and fee

Cost incurred for the period and total cost which does not include G&A and Fee.

Current Month's Cost*	Cumulative Cost
$64,590	$291,786

* Current month cost is 1 December through 31 December.

Person-hours for the period and cumulatively.

Current Month's Hours	Cumulative Hours
653.75	3842.05

3. Schedule and Staffing

Project Staffing continues to expand. Heather Peterson has joined the team. Heather has been involved with the development of wearable computing solutions for nearly four years. Heather has extensive experience in voice recognition systems. Initially, Heather will be supporting device driver development and will eventually support the audio subsystem of the wrist interactive device.

The next Technical Interchange Meeting is tentatively scheduled to occur in January. ViA expects to hold the meeting at the end of January or early February and is working to have several capabilities demonstrable within that timeframe. Specifically, ViA expects to demonstrate two optical designs and preliminary distributed video drivers.

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